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SNOWDRIFT – VISUALISATION ON AN ARCHITECTURAL MODEL IN WIND TUNNEL TESTING

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Abstract
Wind-driven snow in cold regions is a significant problem for the built environment and the integration of snow deposition into the early design process is not sufficient implemented. Snowdrift simulation on a reduced scale in wind tunnel testing often investigates the similarity of particle transport and deposition at and around buildings in comparison to the nature phenomenon. Although a number of studies performed the deposition on a test model with different snow substitutes, the scaling of the phenomenon is still not understood or inaccurate. The study is a visual method of the snow effects on architectural models. A visual performance of the snowdrift simulation was carried out in a small boundary-layer wind tunnel at DTU Civil Engineering. The particle distribution and the effect of the substitute material on the surface and around the test model were performed. The applied method is an alternative approach hence the model design and the visual effect was primarily considered. Main aspects in the model design were different materials and sizes (matter of scale) which were photographed in picture series and time laps. The method indicates the aerodynamic phenomenon as a visual understanding of the physical process.